paging base stations licensed pursuant to part 22 or part 90 of this chapter as of the application filing deadline for the paging response channels. Eligibility for response channels shall be based on the authorized service area of each existing paging licensee. This service area is defined as the area within a 32.2 kilometer radius of the licensee's base stations or, in the case of ''F,'' ''G,'' ''H,'' or ''K'' class stations under §§ 22.502(c) and 90.495(b)(1) of this chapter, as the area that is within the service area radius specified in § 22.504(b)(2) of this chapter. Existing paging licensees are eligible to bid for any response channel in any BTA or MTA which encompasses an authorized base station or which is partly or wholly overlapped by a licensee's service area. These channels shall be used only in paired communications with existing paging channels to provide mobile-to-base station communications. Until two years after the date of initial license grant, eligible paging licensees are limited to a maximum of two response channels within the same geographic area. Licenses for paging response channels are not counted toward the multiple ownership restrictions of § 24.101.

UNPAIRED FREQUENCIES (MHz)

	License area
Mobile transmit [1] (12.5 kHz bandwidth):	
901.90625, 901.94375, 901.98125, 901.91875, 901.95625, 901.99375, 901.93125, 901.96875	BTA
Base or mobile transmit (50 kHz bandwidth):	
940.775, 940.825, 940.875	Nationwide
940.925, 940.975	MTA

[1] Limited to paging licensees authorized under parts 22 and 90 of this chapter.

(b) The following four 12.5 kHz unpaired channels are available for assignment on a MTA basis:

A: 901.9000–901.9125 MHz;
B: 901.9125–901.9250 MHz;
C: 901.9250–901.9375 MHz; and
D: 901.9375–901.9500 MHz.

(c) The following four 12.5 kHz unpaired channels are available for assignment on a BTA basis:

E: 901.9500–901.9625 MHz;
F: 901.9625–901.9750 MHz;
G: 901.9750–901.9875 MHz; and
H: 901.9875–902.0000 MHz.

[59 FR 14119, Mar. 25, 1994; 59 FR 15269, Mar. 31, 1994, as amended at 59 FR 44069, Aug. 26, 1994; 59 FR 46200, Sept. 7, 1994]

§ 24.131 Authorized bandwidth.

The authorized bandwidth of narrowband PCS channels will be 10 kHz for 12.5 kHz channels and 45 kHz for 50 kHz channels. For aggregated adjacent channels, a maximum authorized bandwidth of 5 kHz less than the total aggregated channel width is permitted.

§ 24.132 Power and antenna height limits.

(a) Stations transmitting in the 901–902 MHz band are limited to 7 watts e.r.p.

(b) Mobile stations transmitting in the 930–931 MHz and 940–941 MHz bands are limited to 7 watts e.r.p.

(c) Base stations transmitting in the 930–931 MHz and 940–941 MHz bands are limited to 3500 watts e.r.p. per authorized channel and are unlimited in antenna height except as provided in paragraph (d) of this section.

(d) MTA and BTA base stations located between 200 kilometers (124 miles) and 80 kilometers (50 miles) from their licensed service area border are limited to the power levels in the following table:

Antenna HAAT in meters (feet) (see § 99.53 for HAAT calculation method)	Effective radiated power (e.r.p.) (watts)
183 (600) and below	3500
183 (600) to 208 (682)	3500 to 2584
208 (682) to 236 (775)	2584 to 1883
236 (775) to 268 (880)	1883 to 1372
268 (880) to 305 (1000)	1372 to 1000
305 (1000) to 346 (1137)	1000 to 729
346 (1137) to 394 (1292)	729 to 531
394 (1292) to 447 (1468)	531 to 387
447 (1468) to 508 (1668)	387 to 282
508 (1668) to 578 (1895)	282 to 206
578 (1895) to 656 (2154)	206 to 150
656 (2154) to 746 (2447)	150 to 109
746 (2447) to 848 (2781)	109 to 80
848 (2781) to 963 (3160)	80 to 58
963 (3160) to 1094 (3590)	58 to 42
1094 (3590) to 1244 (4080)	42 to 31
1244 (4080) to 1413 (4636)	31 to 22
Above 1413 (4636)	16

For heights between the values listed above, linear interpolation shall be used to determine maximum e.r.p.

(e) MTA and BTA base stations located less than 80 kilometers (50 miles) from the licensed service area border

must limit their effective radiated power in accordance with the following formula:

$P_W = 0.0175 \times d_{km}^{6.6666} \times h_m^{-3.1997}$

P_W is effective radiated power in watts.
d_{km} is distance in kilometers.
h_m is antenna HAAT in meters; see §99.53 for HAAT calculation method.

(f) All power levels specified in this section are expressed in terms of the maximum power, averaged over a 100 millisecond interval, when measured with instrumentation calibrated in terms of an rms-equivalent voltage with a resolution bandwidth equal to or greater than the authorized bandwidth.

(g) Additionally, PCS stations will be subject to any power limits imposed by international agreements.

[58 FR 59183, Nov. 8, 1993; 59 FR 15269, Mar. 31, 1994]

§24.133 Emission limits.

(a) The power of any emission shall be attenuated below the transmitter power (P), as measured in accordance with §99.132(f), in accordance with the following schedule:

(1) For transmitters authorized a bandwidth greater than 10 kHz:

(i) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency (f_d in kHz) of up to and including 40 kHz: at least 116 Log_{10} ((f_d+10)/6.1) decibels or 50 plus 10 Log_{10} (P) decibels or 70 decibels, whichever is the lesser attenuation;

(ii) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 40 kHz: at least 43+10 Log_{10} (P) decibels or 80 decibels, whichever is the lesser attenuation.I11(2) For transmitters authorized a bandwidth of 10 kHz:

(i) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency (f_d in kHz) of up to and including 20 kHz: at least 116 × Log_{10} ((f_d+5)/3.05) decibels or 50+10×Log_{10} (P) decibels or 70 decibels, whichever is the lesser attenuation;

(ii) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 20 kHz: at least 43+10 Log $_{10}$ (P) decibels or 80 decibels, whichever is the lesser attenuation.

(b) The measurements of emission power can be expressed in peak or average values provided they are expressed in the same parameters as the transmitter power.

(c) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

(d) The following minimum spectrum analyzer resolution bandwidth settings will be used: 300 Hz when showing compliance with paragraphs (a)(1)(i) and (a)(2)(i) of this section; and 30 kHz when showing compliance with paragraphs (a)(1)(ii) and (a)(2)(ii) of this section.

[58 FR 59183, Nov. 8, 1993, as amended at 59 FR 14119, Mar. 25, 1994]

§24.134 Co-channel separation criteria.

The minimum co-channel separation distance between base stations in different service areas is 113 kilometers (70 miles). A co-channel separation distance is not required for the base stations of the same licensee or when the affected parties have agreed to other co-channel separation distances.

§24.135 Frequency stability.

(a) The frequency stability of the transmitter shall be maintained within ± 0.0001 percent (± 1 ppm) of the center frequency over a temperature variation of −30° Celsius to +50° Celsius at normal supply voltage, and over a variation in the primary supply voltage of 85 percent to 115 percent of the rated supply voltage at a temperature of 20° Celsius.

(b) For battery operated equipment, the equipment tests shall be performed using a new battery without any further requirement to vary supply voltage.

(c) It is acceptable for a transmitter to meet this frequency stability requirement over a narrower temperature range provided the transmitter